

# PATENT COOPERATION TREATY

## PCT

### INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY


(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

REC'D 12 SEP 2005

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WIPO

Applicant's or agent's file reference F18354 AS	<b>FOR FURTHER ACTION</b> See Form PCT/IPEA416	
International application No. PCT/IB2004/003319	International filing date (day/month/year) 12.10.2004	Priority date (day/month/year) 15.10.2003
International Patent Classification (IPC) or national classification and IPC C07C27/14, C07C47/04, C07C31/04, B01J23/42		
Applicant ESKOM HOLDINGS LIMITED et al.		
<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 4 sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input type="checkbox"/> sent to the applicant and to the International Bureau a total of sheets, as follows:</p> <p><input type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (sent to the International Bureau only) a total of (Indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p>		
<p>4. This report contains indications relating to the following items:</p> <p><input checked="" type="checkbox"/> Box No. I Basis of the opinion</p> <p><input type="checkbox"/> Box No. II Priority</p> <p><input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p><input type="checkbox"/> Box No. IV Lack of unity of invention</p> <p><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p><input type="checkbox"/> Box No. VI Certain documents cited</p> <p><input checked="" type="checkbox"/> Box No. VII Certain defects in the international application</p> <p><input type="checkbox"/> Box No. VIII Certain observations on the international application</p>		
Date of submission of the demand  18.04.2005	Date of completion of this report  12.09.2005	
Name and mailing address of the International preliminary examining authority:   European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized Officer  Kleidernigg, O  Telephone No. +49 89 2399-	



**INTERNATIONAL PRELIMINARY REPORT  
ON PATENTABILITY**

International application No.  
PCT/IB2004/003319

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**Box No. I Basis of the report**

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1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ This report is based on translations from the original language into the following language , which is the language of a translation furnished for the purposes of:
- ☐ international search (under Rules 12.3 and 23.1(b))
  - ☐ publication of the international application (under Rule 12.4)
  - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)
2. With regard to the **elements\*** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report):*

**Description, Pages**

1-16

as originally filed

**Claims, Numbers**

1-21

as originally filed

- ☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing

3. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages
- ☐ the claims, Nos.
- ☐ the drawings, sheets/figs
- ☐ the sequence listing (*specify*):
- ☐ any table(s) related to sequence listing (*specify*):

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

- ☐ the description, pages
- ☐ the claims, Nos.
- ☐ the drawings, sheets/figs
- ☐ the sequence listing (*specify*):
- ☐ any table(s) related to sequence listing (*specify*):

\* If item 4 applies, some or all of these sheets may be marked "superseded."

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**Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

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**1. Statement**

Novelty (N)	Yes: Claims	1-21
	No: Claims	
Inventive step (IS)	Yes: Claims	1-21
	No: Claims	
Industrial applicability (IA)	Yes: Claims	1-21
	No: Claims	

**2. Citations and explanations (Rule 70.7):**

**see separate sheet**

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**Box No. VII Certain defects in the international application**

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The following defects in the form or contents of the international application have been noted:

**see separate sheet**

## **Re Section V**

- D1: OLAF DEUTSCHMANN ET.AL.: "FORMAL TREATMENT OF CATALYTIC COMBUSTION AND CATALYTIC CONVERSION OF METHANE" CATALYSIS TODAY, vol. 46, 1998, pages 155-163, XP002320964  
D2: US-A-4 082 699 (PETROW ET AL) 4 April 1978 (1978-04-04)  
D3: EP-A-0 934 774 (MAZDA MOTOR CORPORATION) 11 August 1999 (1999-08-11)

The present application is directed to a gas phase process for the catalytic conversion of a lower alkane comprising at most 5 carbon atoms to at least one product selected from the group consisting of alcohols, aldehydes and mixtures thereof, the process comprising bringing said lower alkane into contact with an oxidizing agent in the presence of a catalyst comprising at least one platinum complex.

D1 represents the closest prior art with respect to claim 1 and differs from the matter of claim insofar, that the catalyst is a platinum metal foil and no platinum complex.

D2 represents the closest prior art with respect to claim 19 and differs from the matter of claim 19 insofar, that the ligands are not defined to be amino, hydroxyl, imidazolyl, chloro.

The technical problem may be regarded as the provision of a further process for the preparation of alcohols and/or aldehydes from an alkane comprising at most 5 carbon atoms. The solution is given in the independent claims and concerns the special nature of the catalytic system namely of the platinum complex. It is, however, not deducible for the skilled person in the art neither from D1 nor from D2 taken alone or in combination to apply a platinum complex for the oxidation reaction of lower alkanes comprising at most 5 carbon.

## **Re Section VII**

The term "lower" used in combination with alkane is unclear (Article 6 PCT).